

REMARKS/ARGUMENTS

The amendments set out above and the following remarks are believed responsive to the points raised by the Office Action dated April 11, 2005. In view of the amendments set out above and the following remarks, reconsideration is respectfully requested.

Information Disclosure Statement

An Information Disclosure Statement, including a PTO-1449 Form, and a copy of the document listed on the Form, is submitted herewith, along with the appropriate fee. The document is an English translation of Japanese Patent Publication No. 6-93381 to Hiroyuki, which was cited in the Office Action. It is respectfully requested that the Examiner place her initials in the appropriate area of the Form, thereby indicating her consideration of the document, and return the initialled Form to the Applicant.

The Pending Claims

Claims 2 and 9 have been cancelled, and claims 10-14 have been added. Claims 1, 3-8 and 10-12 are currently pending.

Claims 1 and 3-8 have been amended, and claims 10-14 have been added to describe the invention more clearly. No new matter has been added, and the basis for the amended claim language may be found within the original specification and claims.

Claim 1 is supported at, for example, page 1, paragraph 1; page 6, line 16; page 3, line 26; page 14, line 9; page 18 line 1; and original claim 2. Claims 3-8 are supported at, for example, page 1, paragraph 1. New claim 10 is supported by, for example, original claim 1. New claim 11 is supported at, for example, page 12, paragraph 43. New claims 12, 13 and 14 are supported at, for example, page 11, paragraph 37. New claims 15 and 16 are supported by, for example, original claim 8.

The Office Action

For convenience, the following remarks will address the rejections in the same order they were raised in the Office Action.

Claims 1-3, 6 and 9 were rejected under 35 U.S.C. § 102(b) as anticipated by Japanese Patent Publication No. 6-93381 to Hiroyuki (hereinafter referred to as, "JP '381") or Japanese Patent Publication No. 4-6247 to Katsunori (hereinafter referred to as, "JP '247").

Claims 1 and 6 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 3,294,527 to Floreen et al. (hereinafter referred to as, "Floreen '527").

Claims 4 and 5 were rejected under 35 U.S.C. § 103(a) as unpatentable over JP '381 or JP '247.

Claims 1-8 were rejected under 35 U.S.C. § 103(a) as unpatentable over Floreen '527 or U.S. Patent No. 3,318,690 to Floreen et al. (hereinafter referred to as, "Floreen '690").

Each of these rejections is separately and respectfully traversed.

Amended claim 1, the only independent claim, is directed toward a cast exhaust system for gas turbine or internal combustion engines comprising pressure-containing components comprising an air-melted, substantially graphite and nitrogen-free cast alloy of the claimed composition.

As an initial point, none of the cited references disclose pressure-containing components comprising an air-melted, substantially graphite and nitrogen-free cast alloy as claimed in independent claim 1. Pressure-containing components comprising an air-melted, substantially graphite and nitrogen-free cast alloy as presently claimed are especially advantageous for a cast exhaust system for gas turbine or internal combustion engines. Because none of the cited references disclose pressure-containing components comprising an air-melted, substantially graphite and nitrogen-free cast alloy, as claimed in claim 1, the rejections under 35 U.S.C. § 102 cannot be maintained.

The cast alloy of amended claim 1 also includes, *inter alia*, 0.1 to 1.5 wt. % of manganese, 13.5% to 38 wt. % of nickel, 0.01 to 0.08 wt. % of phosphorus, and a maximum of 0.02 wt. % of nitrogen. JP '247 does not disclose weight percentages of these elements within these claimed ranges and fails to provide an example that meets every limitation of amended claim 1. According to the abstract of JP '247, the alloys contain nitrogen in the amount of 0.05 to 0.4 wt. %, which falls outside the claimed range of a maximum of 0.02 wt. %. The Office Action also referred to alloy 30 on page 276 of JP '247 as teaching an alloy composition which met the claims. Alloy 30 contains 4.07 wt. % manganese, which falls far outside the range 0.1 to 1.5 wt. %, as claimed in amended claim 1. In addition, alloy 30 contains 13.33 wt. % nickel, which falls outside the claimed range of 13.5 to 38 wt. %.

Furthermore, JP '247 does not disclose any amount of phosphorus, while claim 1 requires phosphorus in the amount of 0.01 to 0.08 wt. %. Thus, the rejection under 35 U.S.C. § 102 cannot be maintained.

Likewise, JP '381 does not disclose all of the limitations of amended claim 1. As an initial point, amended claim 1 requires, *inter alia*, pressure-containing components comprising an air-melted, substantially graphite and nitrogen-free cast alloy of the claimed composition. In contrast to the pressure-containing components comprising air-melted, substantially graphite and nitrogen-free cast alloys of the presently claimed invention, JP '381 describes steel band (page 7, line 9 of the English translation of JP '381, enclosed herewith), which are laminated steel plates and not cast alloys. Furthermore, JP '381 describes a process for preparing the steel bands including the steps of forging/hot rolling, annealing, cold-rolling or annealing (page 8, paragraph 18 of JP '381 English translation). These procedures do not make the presently claimed pressure-containing components comprising an air-melted, substantially graphite and nitrogen-free cast alloy of the claimed composition. In fact, there is no disclosure in JP '381 of any pressure-containing components. Thus, JP '381 does not disclose all of the limitations of amended claim 1.

Additionally, JP '381 does not disclose any single example that meets every limitation of amended claim 1. The Office Action referred to alloy 27 on page 521 and alloys 11, 16 and 20 on page 519 of JP '381 as teaching alloy compositions which met the claims.

Alloy 27 contains 0.003 wt. % of phosphorus, which falls below the claimed range of 0.01 to 0.08 wt. %. Alloy 27 also contains 0.05 wt. % of nitrogen, which falls above the claimed maximum of 0.02 wt. %. Therefore, alloy 27 does not meet the limitations of claim 1.

Alloy 11 contains 0.23 wt. % of silicon, which falls below the claimed range of 0.5 – 6 wt. %. Therefore, Alloy 11 does not meet the limitations of claim 1.

Alloy 16 contains 0.08 wt. % manganese, which falls below the claimed range of 0.1 to 1.5 wt. %. Alloy 16 also contains 0.004 wt. % phosphorus, which falls below the claimed range of 0.01 to 0.08 wt. %. Additionally, alloy 16 contains <0.01 wt. % molybdenum, which falls below the claimed range of 0.1 to 4 wt. %. Thus, alloy 16 does not meet the limitations of claim 1.

Likewise, alloy 20 contains 2.03 wt. % of manganese, which falls above the claimed range of 0.1 to 1.5 wt. %. Alloy 20 also contains < 0.01 wt. % of molybdenum, which falls

below the claimed range of 0.1 to 4 wt. %. Therefore, alloy 20 does not meet the limitations of claim 1.

Thus, because JP '381 does not disclose every limitation of amended claim 1, the rejection under 35 U.S.C. § 102 cannot be maintained.

Similarly, Floreen '527 does not disclose all of the limitations of amended claim 1. Floreen '527 teaches that the steels should be "substantially devoid" of phosphorus (col. 3, lines 27-29), in contrast to amount of phosphorous claimed in claim 1 of 0.01 to 0.08 wt. %. Additionally, Floreen '527 does not disclose any single example that meets every limitation of amended claim 1. The Office Action referred to alloys 2 and 4 in Table 1 of column 4 as meeting the limitations of the claims. However, alloys 2 and 4 do not disclose any specific amount of phosphorous, chromium or molybdenum, all of which are required in the amounts claimed in amended claim 1. Furthermore, Floreen '527 does not disclose any pressure-containing components comprising an air-melted, substantially graphite and nitrogen-free cast alloy of the claimed composition, as claimed. Because Floreen '527 does not disclose all of the limitations of amended claim 1, the rejection under 35 U.S.C. § 102 cannot be maintained.

Neither Floreen '527 nor Floreen '690 renders the subject matter of claims 1-8 obvious, and neither JP '381 nor JP '247 renders dependent claims 4 and 5 obvious. The presently claimed invention provides pressure-containing components for gas turbine or internal combustion engines comprising an air-melted, substantially graphite and nitrogen-free cast alloy of the claimed composition. Nothing in any of the four cited references would lead one of ordinary skill in the art to modify the references to include pressure-containing components comprising air-melted, substantially graphite and nitrogen-free cast alloy of the claimed composition. Thus, the rejections under 35 U.S.C. § 103 cannot be maintained.

Furthermore, claim 1 requires phosphorus in the amount of 0.01 to 0.08 wt. %. Both Floreen '527 and Floreen '690 teach that the steels should be "substantially devoid" of phosphorus (Floreen '690, col. 3, lines 27-29; Floreen '527, col. 3, lines 27-29), in contrast to the amount of phosphorous claimed in claim 1 of 0.01 to 0.08 wt. %. Thus, far from suggesting the inclusion of phosphorous in the claimed weight percentages in a pressure-containing component comprising an air-melted, substantially graphite and nitrogen-free cast alloy of the claimed composition, as presently claimed, Floreen '527 and '690 teach away from including any phosphorus in the cast alloy.

Additionally, Claim 5 requires niobium in an amount of 1 to 5 wt. %. No amount of niobium is disclosed or suggested in JP '381. Thus, JP '381 fails to render the subject matter of claim 5 obvious.

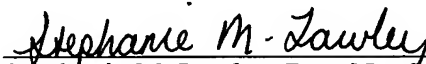
For the reasons set forth above, reconsideration of the rejections is respectfully requested.

Conclusion

In view of the amendments and remarks recited herein, the application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue.

If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,


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